

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

INLAND DIAMOND PRODUCTS CO.,

Plaintiff,

v.

HOYA OPTICAL LABS OF AMERICA,
INC.,

Defendant.

Case No. 2:17-cv-00416-JRG

CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

Before the Court is the opening claim construction brief of Inland Diamond Products Co. (“Plaintiff”) (Dkt. No. 49, filed on February 12, 2018),¹ the response of Hoya Optical Labs of America, Inc. (“Defendant”) (Dkt. No. 51, filed on February 26, 2018), and the reply of Plaintiff (Dkt. No. 53, filed on March 5, 2018). The Court held a hearing on the issues of claim construction on March 26, 2018 (Dkt. No. 56). Having considered the arguments and evidence presented by the parties at the hearing and in their briefing, the Court issues this Order.

¹ Citations to the parties’ filings are to the filing’s number in the docket (Dkt. No.) and pin cites are to the page numbers assigned through ECF.

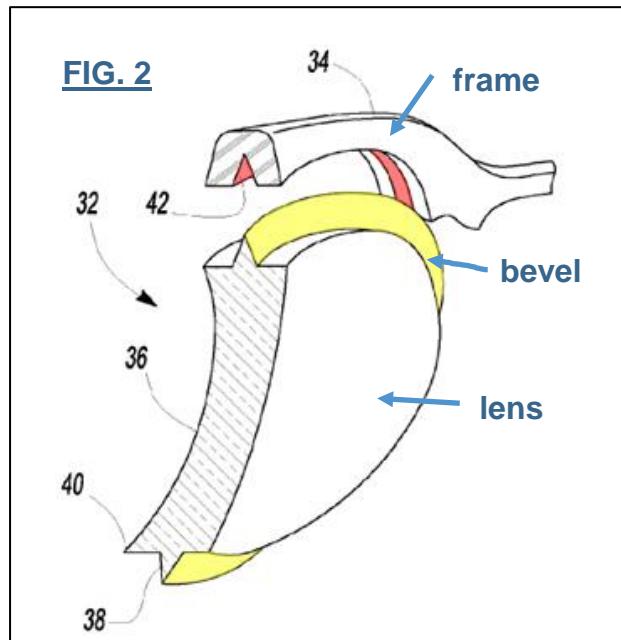
Table of Contents

I.	BACKGROUND	3
II.	LEGAL PRINCIPLES	5
	A. Claim Construction	5
	B. Departing from the Ordinary Meaning of a Claim Term.....	7
III.	AGREED CONSTRUCTIONS.....	9
IV.	CONSTRUCTION OF DISPUTED TERMS.....	9
	A. “interference fit”	9
	B. “in compression”.....	19
	C. “defined by”	22
	D. “is from”.....	24
V.	CONCLUSION	26

I. BACKGROUND

Plaintiff alleges infringement of two U.S. Patents: No. 8,636,360 (the “’360 Patent”) and No. 9,405,130 (the “’130 Patent”) (collectively, the “Asserted Patents”). The patents are related and share a common title: Beveling Wheel, Method for Forming a Beveled Lens for Use with Eyeglasses and a Beveled Lens. Both patents have a priority date of August 12, 2009. The ’360 Patent issued on January 28, 2014 and the ’130 Patent issued on August 2, 2016.

In general, the Asserted Patents are directed to technology for securing a lens within an eyeglass frame. Figure 2 (common to both patents), reproduced here and annotated by the court, is illustrative of the technology. The figure depicts a fragmented view of a portion of lens (36) fit within an eyeglass frame (34). When assembled, the frame (34) supports the lens (36). The periphery of the lens includes a bevel (38, highlighted in yellow). The frame includes a retention structure channel (42, highlighted in red). The bevel (38) and channel (42) cooperate “to provide an interference fit.” ’360 Patent col.4 ll.10–26. Though illustrated as triangular, “the shape of the bevel 38 and the retention structure 42 may include any polygonal shapes, provided that bevel 38 may achieve an interference fit with retention structure 42.” *Id.* at col.4 ll.21–25. “An interference fit of a bevel on a plastic lens to a bottom of a receiving channel of an eyeglass frame provides a relatively secure assembly with regards to lenses falling out.” *Id.* at col.3 ll.26–28.



The abstracts of the Asserted Patents are identical and provide:

The present invention relates to a beveling wheel and method for forming a beveled lens with the beveling wheel for use with eyeglasses. One embodiment includes a prescription lens for use on an eyeglass frame having a receiving channel. The receiving channel includes a channel bottom and opposed interior wall surfaces having a first angle therebetween. The prescription plastic lens includes a prescription lens body generally defined by a peripheral edge having a bevel extending away from the edge to a vertex. The bevel has a distal portion with a second angle. The bevel is receivable within the receiving channel. At least a portion of the vertex of the bevel has an interference fit with the receiving channel bottom when held within the eyeglass frame. The first angle is greater than the second angle.

Claim 1 of the '360 Patent and Claim 11 of the '130 Patent, exemplary apparatus claims to a lens and eyeglasses, respectively, recite as follows:

1. A prescription plastic lens for use in an eyeglass frame, said eyeglass frame having a receiving channel defined by opposed interior wall surfaces having a first angle therebetween, the receiving channel having a channel bottom at one end and a channel opening at the other end, the plastic lens comprising:

a prescription lens body generally defined by a peripheral edge, the peripheral edge having a bevel extending away from the peripheral edge to a vertex, the bevel having a distal portion having a second angle defined between opposing sides of the bevel adjacent to the vertex, the bevel being receivable within the receiving channel, at least a portion of the vertex of the bevel being in contact with the receiving channel bottom and having an interference fit with the receiving channel bottom when held within the eyeglass frame, the first angle being greater than the second angle;

wherein the portion of the vertex in contact with the receiving channel bottom is in compression once the plastic lens is fitted in the frame.

11. A pair of eyeglasses, comprising:

an eyeglass frame having a receiving channel, the receiving channel defined by opposed interior wall surfaces having a first angle therebetween, the receiving channel having a channel bottom at one end, a channel opening at the other end, and a channel depth; and

a prescription plastic lens secured to the eyeglass frame and including a body having a peripheral edge having a bevel extending away from the peripheral edge to a vertex, the vertex including two sides defining a second angle that is less than the first angle, and the vertex contacting and forming an interference fit with a bottom of the receiving channel and having a height between the peripheral edge and the vertex that is greater than the channel depth and is from 0.30 to 0.75 mm.

II. LEGAL PRINCIPLES

A. Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at 861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (“There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.”) (vacated on other grounds).

“The claim construction inquiry … begins and ends in all cases with the actual words of the claim.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). “[I]n all aspects of claim construction, ‘the name of the game is the claim.’” *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)). First, a term’s context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim’s meaning, because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim

terms can also assist in understanding a term’s meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002). “‘Although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.’” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *see also Phillips*, 415 F.3d at 1323. “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office (“PTO”) and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1318; *see also Athletic*

Alternatives, Inc. v. Prince Mfg., 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be “unhelpful as an interpretive resource”).

Although extrinsic evidence can also be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are not helpful to a court. *Id.* Extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.* The Supreme Court recently explained the role of extrinsic evidence in claim construction:

In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be “so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning”). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the “evidentiary underpinnings” of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.

Teva Pharm. USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 841 (2015).

B. Departing from the Ordinary Meaning of a Claim Term

There are “only two exceptions to [the] general rule” that claim terms are construed according to their plain and ordinary meaning: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the

specification or during prosecution.”² *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (“[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.”). The standards for finding lexicography or disavowal are “exacting.” *GE Lighting Solutions*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* (quoting *Thorner*, 669 F.3d at 1365); *see also Renishaw*, 158 F.3d at 1249. The patentee’s lexicography must appear “with reasonable clarity, deliberateness, and precision.” *Renishaw*, 158 F.3d at 1249.

To disavow or disclaim the full scope of a claim term, the patentee’s statements in the specification or prosecution history must amount to a “clear and unmistakable” surrender. *Cordis Corp. v. Boston Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009); *see also Thorner*, 669 F.3d at 1366 (“The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.”). “Where an applicant’s statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable.” *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

² Some cases have characterized other principles of claim construction as “exceptions” to the general rule, such as the statutory requirement that a means-plus-function term is construed to cover the corresponding structure disclosed in the specification. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1367 (Fed. Cir. 2002).

III. AGREED CONSTRUCTIONS

The parties have agreed to the following constructions set forth in their Joint Patent Rule 4-5(d) Claim Construction Chart (Dkt. No. 54). *See also* Dkt. No. 66, Hr'g Tr. at 3:19-4:10.

Term ³	Agreed Construction
“ranges from” • '360 Patent Claims 2, 6	plain and ordinary meaning
“apex” • '130 Patent Claims 2, 11	plain and ordinary meaning
“secured to” • '130 Patent Claims 7, 11	plain and ordinary meaning

Having reviewed the intrinsic and extrinsic evidence of record, the Court agrees with and hereby adopts the parties' agreed constructions. *See id.*

IV. CONSTRUCTION OF DISPUTED TERMS

A. “interference fit”

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
“interference fit” • '360 Patent Claim 1 • '130 Patent Claims 1, 11	fit between the lens and frame in which an external dimension of the lens exceeds a corresponding internal dimension between the frame channel bottoms and the resulting contact between the bevel vertex and channel bottom secures the lens within the frame	the bevel fits into the triangular channel in such a manner that the channel interferes with the motion of the lens by frictional forces

³ For all term charts in this order, the claims in which the term is found are listed with the term but: (1) only the highest-level claim in each dependency chain is listed, and (2) only asserted claims identified in the parties' Joint Patent Rule 4-5(d) Claim Construction Chart (Dkt. No. 54) are listed.

The Parties' Positions

Plaintiff submits: (1) “interference fit” is a term of art denoting a secure fit between parts in which a first part is fit within a space in a second part, which space is smaller than first part’s external dimension, Dkt. No. 49 at 15–20; (2) the term is used in the Asserted Patents according to this ordinary meaning, *id.* at 15, 20–21; and (3) Defendant’s proposed conflation of “interference fit” and “contact” is improper as “contact” is separately expressed in the claim, *id.* at 12–15. The patents provide that the “interference fit” secures the lens within the frame. *Id.* at 14–15 (citing ’360 Patent col.3 ll.26–28). This secure fit is achieved through an aspect of the interference fit that is well-known in the art; namely, an interference fit between two parts requires that the “external dimension of one part slightly exceeds the internal dimension of the part into which it has to fit.” *Id.* at 15–16 (quoting *New Oxford American Dictionary* 879 (2d ed. 2005), Dkt. No. 49-6 at 11). Defendant’s proposed construction effectively conflates “interference fit” with a fit involving frictional forces. Because all contact between objects involves frictional forces, Defendant is proposing that an interference fit is simply contact between the lens and the frame. However, this is improper because such “contact” is separately recited in the claims and contact alone does not connote that the frame secures the lens. *Id.* at 12–15.

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position: **Intrinsic evidence:** ’360 Patent col.3 ll.26–28, col.4 l.61 – col.5 l.2; ’360 Patent File Wrapper August 12, 2013 Amendment at 9 (Plaintiff’s Ex. N, Dkt. No. 49-14 at 10); U.S. Patent Application Publication No. 2008/0125013 (Plaintiff’s Ex. U, Dkt. No. 49-21). **Extrinsic evidence:** Wiand Decl.⁴ (Plaintiff’s Ex. C, Dkt. No. 49-3); *Friction* (Sept. 24, 1999), <http://physics.bu.edu/~duffy/py105/Friction.html> (Feb. 12, 2018) (Plaintiff’s Ex. D, Dkt. No.

⁴ Declaration of Ronald C. Wiand (Feb. 12, 2018).

49-4); *Friction*, <http://www.splung.com/content/sid/2/page/friction> (Feb. 12, 2018) (Plaintiff's Ex. E, Dkt. No. 49-5); *New Oxford American Dictionary* 879 (2d ed. 2005), "interference fit" (Plaintiff's Ex. F, Dkt. No. 49-6 at 11); Google dictionary search, "interference fit" <https://www.google.com/search?site=async/dictw&q=Dictionary#dobs=interference%20fit> (Feb. 11, 2018) (Plaintiff's Ex. G, Dkt. No. 49-7); *Machinery's Handbook* 1710 (25th ed. 1996), "interference-fit threads" (Plaintiff's Ex. H, Dkt. No. 49-8 at 4); *Oxford Dictionaries* online, "interference fit"⁵ (Plaintiff's Ex. I, Dkt. No. 49-9); *Dictionary.com*, "interference fit"⁶ (Plaintiff's Ex. J, Dkt. No. 49-10); *Marks' Standard Handbook for Mechanical Engineers* 8-43 – 8-44 (10th ed. 1996) (Plaintiff's Ex. K, Dkt. No. 49-11 at 5–6); Paul R Yoder, Jr., *Mounting Lenses in Optical Instruments* 28 (1995) (Plaintiff's Ex. L, Dkt. No. 49-12 at 5); Engineer on a Disk, *eNotes: Manufacturing Processes – 36.1 The Basics of Fits*, http://engineeronadisk.com/notes_manufact_assemblya3.html (Feb. 12, 2018) (Plaintiff's Ex. M, Dkt. No. 49-13); U.S. Patent No. 5,593,045 (Plaintiff's Ex. R, Dkt. No. 49-18); U.S. Patent No. 6,474,810 (Plaintiff's Ex. S, Dkt. No. 49-19); U.S. Patent Application Publication No. 2007/0280614 (Plaintiff's Ex. T, Dkt. No. 49-20).

Defendant responds: (1) during prosecution of the '360 Patent, the patent examiner defined "interference fit" as a fit in which friction interferes with motion, Dkt. No. 51 at 7–8; (2) the examiner's definition comports with the use of "interference fit" in the Asserted Patents, *id.* at 8–9; (3) Plaintiff's proposed construction would require a lens-compression limitation within "interference fit," which would be improper because a lens-compression limitation is separately recited in the claims and thus, the patentee disclaimed such an interpretation of "interference fit", *id.* at 9–11; and (4) the extrinsic evidence indicates a meaning of "interference fit" that is contrary

⁵ https://en.oxforddictionaries.com/definition/interference_fit (Feb. 12, 2018).

⁶ <http://www.dictionary.com/browse/interference-fit?s=t> (Feb. 12, 2018).

to the term’s use in the patents and prosecution history, and therefore that meaning should not be adopted, *id.* at 11–18.

In addition to the claims themselves, Defendant cites the following intrinsic and extrinsic evidence to support its position: **Intrinsic evidence:** ’360 Patent figs.2, 3b, col.2 ll.30–32, col.2 ll.36–38, col.4 ll.18–26, col.5 ll.29–33, ’360 Patent File Wrapper July 31, 2012 Office Action at 3 (Defendant’s Ex. C, Dkt. No. 51-3 at 5), August 5, 2013 Proposed Interview Agenda at 2 (Defendant’s Ex. E, Dkt. No. 51-5 at 3), August 12, 2013 Amendment at 2 (Defendant’s Ex. D, Dkt. No. 51-4 at 3), August 20, 2013 Advisory Action (Defendant’s Ex. F, Dkt. No. 51-6), September 12, 2013 Amendment at 2 (Defendant’s Ex. G, Dkt. No. 51-7 at 3). **Extrinsic evidence:** *New Oxford American Dictionary* 879 (2d ed. 2005), “interfere” (Plaintiff’s Ex. F, Dkt. No. 49-6 at 11); Wiand Decl. ¶ 19 (Plaintiff’s Ex. C, Dkt. No. 49-3 at 6); *Machinery’s Handbook* 642–43, 656–59 (25th ed. 1996) (Defendant’s Ex. H, Dkt. No. 51-8 at 4–9); *Marks’ Standard Handbook for Mechanical Engineers* 8-43 – 8-44 (10th ed. 1996) (Plaintiff’s Ex. K, Dkt. No. 49-11 at 5–6); Paul R. Yoder, Jr., *Mounting Lenses in Optical Instruments* 28 (1995) (Plaintiff’s Ex. L, Dkt. No. 49-12 at 5); U.S. Patent No. 5,593,045 (Plaintiff’s Ex. R, Dkt. No. 49-18); U.S. Patent No. 6,474,810 (Plaintiff’s Ex. S, Dkt. No. 49-19); U.S. Patent Application Publication No. 2007/0280614 (Plaintiff’s Ex. T, Dkt. No. 49-20).

Plaintiff replies: (1) the examiner’s statement that Defendant presents as a definition of “interference fit” is not a definition but rather it is a characterization of a prior-art reference, Dkt. No. 53 at 4–5; and (2) the patentee did not adopt the examiner’s statement but rather it disputed whether the prior-art reference disclosed an “interference fit,” *id.* at 5–6.

Plaintiff cites further **intrinsic evidence** to support its position: '360 Patent File Wrapper July 31, 2012 Office Action at 3 (Defendant's Ex. C, Dkt. No. 51-3 at 5), December 28, 2012 Response at 9,⁷ August 5, 2013 Proposed Interview Agenda at 2 (Defendant's Ex. E, Dkt. No. 51-5 at 3).

Analysis

The primary issue in dispute is whether “interference fit” requires more than frictional contact between the vertex of the lens’s bevel and the frame’s receiving channel. It does. The interference fit requires that the lens is larger than the frame opening in which the lens fits such that the lens is secured within the frame.

The term “interference fit” has a well-established meaning. Evidence of this exists in general-purpose dictionaries, technical treatises, and unrelated patents. For example, one general-purpose dictionary defines “interference fit” as “a fit between two parts in which the external dimension of one part slightly exceeds the internal dimension of the part into which it has to fit.” *New Oxford American Dictionary* 879, Dkt. No. 49-6 at 11. A mechanical-engineering-and-machining treatise provides a similar definition: an “interference fit” is a fit “having limits of size so specified that an interference always results when mating parts are assembled” and “fit” is “the general term used to signify the range of tightness that may result from the application of a specific combination of allowances and tolerances in the design of mating parts.” *Machinery’s Handbook* 642–43 (25th ed. 1996), Dkt. No. 51-8 at 4–5). Consistent with these definitions, an optical-engineering treatise describes an “interference fit” used to secure a lens-holding ring within a cell: “The OD of the ring is made slightly oversize with respect to the ID of the cell.” Paul R. Yoder, Jr., *Mounting Lenses*

⁷ Plaintiff cites “Ex. C” as the December 12, 2012 Response. Plaintiff’s Ex. C is the Wiand Declaration and Defendant’s Ex. C is the July 31, 2012 Office Action. The Court did not find the December 12, 2012 Response in the submitted exhibits. That response, however, is available to the public through the U.S. Patent and Trademark Office’s Public Patent Application Information Retrieval system at <https://portal.uspto.gov/pair/PublicPair>.

in Optical Instruments 28 (1995), Dkt. No. 49-12 at 5. Finally, patents and patent applications related to supporting eyeglasses, constructing eyeglass frames, and securing fiber lightguides use “interference fit” to denote a fit in which a part is fit within a space smaller than the part. *See* U.S. Patent No. 5,593,045 col.12 ll.46–65 (describing a pin with rounded ends “slightly greater in diameter than the lateral bore … to provide an interference fit” when inserted in the bore), Dkt. No. 49-18 at 14; U.S. Patent No. 6,474,810 col.4 ll.18–34 (describing a bulb “greater in diameter than [a] hole” forming an “interference fit” when inserted through the hole), Dkt. No. 49-19 at 8; U.S. Patent Application Publication No. 2007/0280614 ¶ [0029] (describing a “disk-shaped insulator … slightly larger in diameter than[n] the inside of … the support member … in order to provide an interference fit between the disk-shaped insulator [] and support member”), Dkt. No. 49-20 at 8. The Court finds the extrinsic evidence establishes that “interference fit” has an ordinary meaning connoting that a part is fit within a space smaller than such part.

“Interference fit” is used in the Asserted Patents consistent with the term’s ordinary meaning. For example, the patents provide:

Another failure mode occurs when the *glass lenses crack as a result of having an interference fit of the vertex of the bevel with a bottom of a channel portion of the eyeglass frame*. It is well practiced in the art to avoid cracking of the lens by having the bevel vertex not in contact with the bottom of the channel of the eyeglass frame. As such, glass lenses have always been manufactured to have bevels which will not contact the bottom of the eyeglasses frame.

...

It is an unfortunate consequence of using beveling wheels designed glass to edge plastic lens materials that the bevel is not fully inserted into the channel of the eyeglass frame. *When the plastic lens is not fully inserted, the lens is prevented from forming an optimal interference fit between the lens and the eyeglass frame*. As a result, a plastic lens is very susceptible to falling out of the eyeglass frame caused by shrinkage of the lens, loosening of the retention screws or twisting of the frames.

'360 Patent col.1 ll.22–45 (emphasis added). That a lens would crack “as a result of having an interference fit” between the lens’s bevel and the frame suggests than an interference fit is something more than simple contact. Indeed, this is entirely consistent with the ordinary meaning of interference fit, which provides that the lens is forced into a frame opening smaller than the lens. That the cracking problem is avoided when “the bevel is not fully inserted into the channel of the eyeglass frame” to prevent an “interference fit” is also consistent with the ordinary meaning of “interference fit.” When the outer dimension of the lens is smaller than the space within the frame opening into which the lens is inserted, there cannot be an “interference fit” under the term’s ordinary meaning and such a situation is not represented as having an “interference fit” in the patents.

The Asserted Patents further provide a description of the desirability of an interference fit that is consistent with the ordinary meaning of the term:

*An **interference fit** of a bevel on a plastic lens to a bottom of a receiving channel of an eyeglass frame provides a relatively secure assembly with regard to lenses falling out. **The assembly is particularly secure when a bevel height of the bevel on the plastic lens is greater than a depth of a groove of the eyeglass frame by an amount exceeding a typical shrinkage and/or creep dimensional change associated with polymeric materials used in a lens body for a lens.*** Use of plastic for a lens allows an interference fit between a vertex of the bevel and a receiving channel of the eyeglass frame. Unlike a glass lens, the plastic lens is not readily susceptible to cracking when a vertex of the glass bevel comes in prolonged contact with the receiving channel bottom of the eyeglass frame. The prolonged contact in at least one embodiment may be more than a day. In another embodiment the prolonged contact may be more than a month. In yet another embodiment, the prolonged contact may be more than a year.

Id. at col.3 ll.26–42 (emphasis added). Again, this is consistent with the ordinary meaning of “interference fit”—the exterior dimension of the lens bevel is larger than the size of the frame opening into which it fits. Optimally, it is larger by an amount greater than the typical shrinkage or creep of the lens that can affect the size of the lens.

An “interference fit” was never defined contrary to its ordinary meaning during prosecution. Defendant’s argument that “interference fit” was somehow defined by the examiner—and then adopted by the patentee—is misplaced. The examiner stated:

Re claim 1, Chappell teaches a prescription lens (see at least numeral 11) for use in an eyeglass frame (see at least numeral 10) having a receiving channel (see at least numerals 21 and 18 which point to channel and bevel), the receiving channel defined by opposed interior wall surfaces having a first angle there between (see at least numerals 18 and 21), the receiving channel having a channel bottom at one end and a channel opening at the other end (see at least numerals 18 and 21), the lens comprising: a prescription lens body generally defined by a peripheral edge (see at least numeral 11), the peripheral edge having a bevel extending away from the peripheral edge to a vertex (see at least numerals 18 and 21), the bevel having a distal portion having a second angle (see at least numerals 18 and 21), the bevel being receivable within the receiving channel (see at least numerals 18 and 21), *at least a portion of the vertex of the bevel having an interference fit with the receiving channel bottom when held within the eyeglass frame (the bevel fits into the triangular channel in such a manner that the channel interferes with the motion of the lens by frictional forces)*, the first angle being greater than the second angle (a triangle has 3 angles and as the bevel is not equilateral and the angle of the bevel is located at the distal or location situated farthest from point of attachment or origin and that adds the question which end is farthest from the point of attachment.

’360 Patent File Wrapper July 31, 2012 Office Action at 2–3 (emphasis added), Dkt. No. 51-3 at 4–5. The emphasized portion is not a definition of “interference fit.” Rather, it is the examiner’s characterization of a prior-art disclosure. The characterization is consistent with the ordinary meaning of “interference fit” in that such a fit necessarily “interferes with the motion [of the fitted parts] by frictional forces.” However, this characterization alone does not establish an “interference fit” under the ordinary meaning of the term because it only addresses the contact between the bevel and the frame channel and fails to address the lens support within the frame that is created by the interference fit. Indeed, rather than adopting the examiner’s characterization of “interference fit” as definitional, the patentee highlighted the missing “support” element:

Chappell requires a supporting member (19) that extends around the bottom of the lenses in a groove (20) and attaches to the frame arms (16 and 17) to support the

lenses and keep them attached to the frame. Without the supporting member, the lenses would not be supported by the frame. ...

Also as discussed above, Chappell teaches an eyeglass frame and lens that utilizes a supporting member (19) to support the frame and ***does not teach an interference fit that support[s] a lens.***

'360 Patent File Wrapper December 28, 2012 Response at 9 (emphasis added). This exchange does not rise to the level of patentee lexicography. *See GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) ("[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal. ... The standards for finding lexicography and disavowal are exacting. To act as its own lexicographer, a patentee must 'clearly set forth a definition of the disputed claim term,' and 'clearly express an intent to define the term.'" (internal citations omitted)).

The Court is not persuaded that an interference fit necessarily requires compression of the larger part that is fit within a smaller space. It is apparent that in such a fit something has to give. However, it is not apparent that the inserted part—here, the lens—must be compacted to fit. For example, the space could be enlarged by compression or deformation of the material that defines the space. In the context of the Asserted Patents, this could be implemented by the frame material being compressed or the frame being deformed. Addition of a lens-in-compression limitation during prosecution or inclusion of such a limitation in the issued claim sets does not mandate deviating from the ordinary meaning of "interference fit." Rather than disavowing the ordinary meaning of "interference fit"—which allows, but does not necessitate, the lens to compress—the added "compression" limitation further limits the claims by requiring the vertex of the lens's bevel to be "in compression." The expressed "compression" limitation simply does not rise to the level of a disavowal of the ordinary meaning of "interference fit." *See GE Lighting Sols.*, 750 F.3d at 1309 ("[T]he specification and prosecution history only compel departure from the plain meaning

in two instances: lexicography and disavowal. ... The standards for finding lexicography and disavowal are exacting. ... disavowal requires that ‘the specification [or prosecution history] make[] clear that the invention does not include a particular feature.’” (alterations in original) (internal citations omitted)).

The Court rejects Defendant’s proposal to limit the bevel-receiving “channel” to a “triangular channel.” Defendant has not provided any compelling reason to do so. Indeed, Defendant’s proposed “triangular” limitation conflicts with the description of the bevel in the specification:

It should be understood that while the bevel 38 and the retention structure 42 are illustrated as being triangular, ***the shape of the bevel 38 and the retention structure 42 may include any polygonal shapes***, provided that bevel 38 may achieve an interference fit with retention structure 42, without exceeding the scope of the present invention.

’360 Patent col.4 ll.21–26 (emphasis added). For example, the embodiment illustrated in Figure 6 has a channel shaped to receive a frustum, not a triangle. *Id.* at fig.6, col.5 l.59 – col.6 l.15.

Accordingly, the Court construes “interference fit,” and the relevant surrounding claim language for contextual clarity, as follows:

- “the vertex of the bevel being in contact with the receiving channel bottom and having an interference fit with the receiving channel bottom” means “the contact of the bevel’s vertex with the bottom of the receiving channel where the height of the bevel is greater than the depth of the receiving channel and where the lens as a whole is larger than the frame’s area in which to receive the lens”;
- “the vertex of the bevel being in contact with the receiving channel bottom, having an interference fit with the receiving channel bottom” means “the contact of the bevel’s vertex with the bottom of the receiving channel where the height of

the bevel is greater than the depth of the receiving channel and where the lens as a whole is larger than the frame's area in which to receive the lens";

- "the vertex contacting and forming an interference fit with a bottom of the receiving channel" means "the contact of the bevel's vertex with the bottom of the receiving channel where the height of the bevel is greater than the depth of the receiving channel and where the lens as a whole is larger than the frame's area in which to receive the lens."

B. "in compression"

Disputed Term	Plaintiff's Proposed Construction	Defendant's Proposed Construction
"in compression" • '360 Patent Claim 1 • '130 Patent Claims 1, 11	plain and ordinary meaning, namely "the state of being compressed, i.e. pressed into less space"	plain and ordinary meaning, i.e. "being pressed together, but not necessarily into less space"

The Parties' Positions

Plaintiff submits: The plain and ordinary meaning of "compression" connotes that a lens "in compression" occupies less space by virtue of being compressed. Dkt. No. 49 at 22. This comports with the use of the term in the Asserted Patents, which provides that the "'compression' results in deformation." *Id.* at 22 (citing '360 Patent col.4 ll.39–46).

In addition to the claims themselves, Plaintiff cites the following intrinsic and extrinsic evidence to support its position: **Intrinsic evidence:** '360 Patent col.4 ll.39–46. **Extrinsic evidence:** *American Heritage Dictionary* 303 (2d College ed. 1982), "compression" and "compressed" (Plaintiff's Ex. O, Dkt. No. 49-15 at 5); *Webster's New World Dictionary* 292 (2d

College ed. 1984), “compression” and “compressed” (Plaintiff’s Ex. P, Dkt. No. 49-16 at 5); *Dictionary.com*, “compression”⁸ and “compressed”⁹ (Plaintiff’s Ex. Q, Dkt. No. 2, 4).

Defendant responds: “Compression,” as used in the Asserted Patents, does not necessarily require that the lens is squeezed into less space. Dkt. No. 51 at 19. The patents distinguish deformation from compression because Claim 11 of the ’360 Patent requires both the lens-bevel vertex be “in compression” and that it be “deformed.” *Id.* at 19–20. Thus, an interpretation of “compression” that requires the vertex be deformed by forcing it into less space would improperly render the “deformed” distinction in Claim 11 superfluous. *Id.* at 19–20. Further, the patentee distinguished “compression” from deformation during prosecution. *Id.* at 20 (citing ’360 Patent File Wrapper September 12, 2013 Response at 8–10, Dkt. No. 51-7 at 9–11).

In addition to the claims themselves, Defendant cites the following intrinsic and extrinsic evidence to support its position: **Intrinsic evidence:** ’360 Patent File Wrapper September 12, 2013 Amendment at 8–10 (Defendant’s Ex. G, Dkt. No. 51-7 at 9–11). **Extrinsic evidence:** *American Heritage Dictionary* 303 (2d College ed. 1982) (Plaintiff’s Ex. O, Dkt. No. 49-15 at 5); *Webster’s New World Dictionary* 292 (2d College ed. 1984) (Plaintiff’s Ex. P, Dkt. No. 49-16 at 5).

Plaintiff replies: Forcing the lens’s vertex into a space in the frame that is smaller than the lens does not necessarily cause the lens to deform but rather it may cause the frame to deform. Dkt. No. 53 at 8.

Analysis

The issue here is whether a vertex of the lens bevel being “in compression” necessarily means that it occupies less space than it would when it is not compressed. It does.

⁸ <http://www.dictionary.com/browse/compression> (Feb. 6, 2018)

⁹ <http://www.dictionary.com/browse/compressed> (Feb. 6, 2018)

“Compression” in the Asserted Patents connotes a reduction in size. The parties agree that under the ordinary meaning of “interference fit,” the two parts forming the interference fit necessarily press against each other. As set forth above, “interference fit” is used in the Asserted Patents according to the term’s ordinary meaning. Thus, to state that an object is in an “interference fit” and “in compression” with another object presumptively means more than the object is pressed against another object. Consistent with the ordinary meaning of “compression,” an object in an “interference fit” that is also “in compression” is squeezed to occupy a smaller space than when not “in compression”—such an object is compacted. *See, e.g., American Heritage Dictionary* 303 (2d College ed. 1982) (defining: (1) “compress” as “[t]o shorten or condense as if by pressing or squeezing,” (2) “compressed” as “made compact,” (3) “compression” as “[t]he state of being compressed”), Dkt. No. 49-15 at 5; *Webster’s New World Dictionary* 292 (2d College ed. 1984) (defining: (1) “compress” as “make more compact by or as by pressure,” (2) “compressed” as “made more compact by pressure,” (3) “compression” as “being compressed”), Dkt. No. 49-16 at 5. Defendant’s proposed construction appears to treat all applications of pressure as “compression.”

The fact that certain claims require that the lens vertex be both “deformed” and “in compression” does not mandate that “in compression” means something other than compaction. The Court is not persuaded that compacting (or condensing) an object necessarily involves deforming the object. For example, an object may be compacted yet still maintain its form—in other words, only its size is changing. In the context of the Asserted Patents, for example, the vertex of the lens’s bevel may be compacted yet still maintain the same defining angles it has when the vertex is not compacted. Such a compacted vertex would not be deformed.

Accordingly, the Court construes “in compression” as follows:

- “in compression” means “compacted.”

C. “defined by”

Disputed Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
“defined by” • ’360 Patent Claim 1 • ’130 Patent Claims 1, 11	plain and ordinary meaning	plain and ordinary meaning, i.e. “completely specified by”

The Parties’ Positions

Plaintiff submits: “Defined by” has a plain meaning that is readily accessible to the jury and therefore need not be construed. Dkt. No. 49 at 23. Defendant’s proposed “completely specified by” is not the plain and ordinary meaning of “defined by.” *Id.* at 23–24.

In addition to the claims themselves, Plaintiff cites the following **extrinsic evidence** to support its position: *American Heritage Dictionary* 375 (2d College ed. 1982), “define” (Plaintiff’s Ex. O, Dkt. No. 49-15 at 5).

Defendant responds: The Asserted Patents use both “defined by” and “generally defined by” implying the two terms have different meanings. Dkt. No. 51 at 21–22. In the patents, a first parameter is “defined by” other parameters if the first parameter is completely specified by those other parameters. *Id.* at 22–23 (citing, *inter alia*, ’360 Patent col.5 ll.61–64). In contrast, the first parameter is “generally defined by” the other parameters if more information is needed to completely specify the first parameter. *Id.* (citing, *inter alia*, ’360 Patent col.5 ll.16–21). This usage comports with the plain and ordinary meaning of “defined by.” *Id.* at 23–24.

In addition to the claims themselves, Defendant cites the following intrinsic and extrinsic evidence to support its position: **Intrinsic evidence:** ’360 Patent col.4 ll.30–32, col.5 ll.16–21, col.5 ll.48–50, col.5 ll.53–55, col.5 ll.61–64, col.5 l.67 – col.6 l.3, col.6 ll.5–7, col.7 ll.23–29. **Extrinsic evidence:** *New Oxford American Dictionary* 444 (2d ed. 2005), “define” (Plaintiff’s Ex.

F, Dkt. No. 49-6 at 8, 9); *American Heritage Dictionary* 375 (2d College ed. 1982), “define” (Plaintiff’s Ex. O, Dkt. No. 49-15 at 5).

Plaintiff replies: Defendant’s proposed construction improperly injects ambiguity into an otherwise accessible claim term. Dkt. No. 53 at 9. Specifically, Claim 1 of the ’360 Patent recites a “receiving channel defined by opposed interior wall surfaces” and it is unclear what it would mean for the receiving channel to be “completely specified” by the opposed interior wall surfaces. *Id.* Further, the terms “generally defined by” and “defined by” are used synonymously in the Asserted Patents. *Id.* at 10–11 (citing ’360 Patent col.5 ll.16–21, col.5 ll.61–64).

Plaintiff cites further **intrinsic evidence** to support its position: ’360 Patent col.5 ll.16–21, col.5 ll.61–64.

Analysis

The issue in dispute distills to whether recitation that the frame’s receiving channel is “defined by” the walls of that channel necessarily means that the channel is “completely specified by” the walls. It does not.

The claims recite not only a receiving channel “defined by” walls but also other specific features of the receiving channel. For example, Claim 1 of the ’360 Patent provides:

A prescription plastic lens for use in an eyeglass frame, said eyeglass frame having a *receiving channel defined by opposed interior wall surfaces* having a first angle therebetween, *the receiving channel having a channel bottom* at one end and a *channel opening* at the other end, the plastic lens comprising:

’360 Patent col.8 ll.36–41 (emphasis added). If the channel were “completely specified” by the walls, there would be no need to specify that the channel has an opening at one end and a bottom at the other. Rather, the wall surfaces bound or outline the channel, just as the channel opening and channel bottom bound or outline the channel. This comports with the ordinary meaning of

“defined by.” *See, e.g., New Oxford American Dictionary* 444 (2d ed. 2005) (“define” means “mark out the boundary or limits of” and “make clear the outline of”), Dkt. No. 49-6 at 89.

Accordingly, the Court defines “defined by” as follows:

- “defined by” means “bounded at least in part by”

D. “is from”

Disputed Term	Plaintiff’s Proposed Construction	Defendant’s Proposed Construction
“is from” • ’130 Patent Claims 2, 11	plain and ordinary meaning	plain and ordinary meaning, i.e. “varies between [X] and [Y]”

The Parties’ Positions

Plaintiff submits: The term “is from” has a readily understood plain meaning and therefore does not need to be construed. Dkt. No. 49 at 24–25. Defendant’s proposed “varies between [X] and [Y]” improperly injects ambiguity in that it is not clear whether it means fluctuating between X and Y or changing from one end to another or something else. *Id.* at 25.

Defendant responds: During prosecution, the patentee replaced “ranges from” with “is from” in certain claims, thereby implying that “is from” differs in meaning from “ranges from.” Dkt. No. 51 at 24–25.

In addition to the claims themselves, Defendant cites the following **intrinsic evidence** to support its position: ’130 Patent File Wrapper March 22, 2016 Amendment at 2–3 (Defendant’s Ex. I, Dkt. No. 51-9 at 3–4).

Plaintiff replies: Defendant originally understood that “is from” and “ranges from” have the same meaning. Dkt. No. 53 at 11 (citing Joint Claim Construction and Prehearing Statement Pursuant to P.R. 4-3 Exhibit B, Dkt. No. 41-2).

Analysis

The dispute here is whether the limitations directed to a bevel height that “is from 0.30 to 0.75 mm” means that the bevel height “varies” or “must vary” within that range. It does not.

Defendant’s only support for its proposed “varies between” limitation is that some claims state “ranges from” and others state “is from.” Without more, this is not enough to interpret “is from” as “varies between,” which the Court understands would require the vertex height to be 0.30 mm at some points on the lens and 0.75 mm at other points on the lens. Defendant has not identified a description of such a purposeful variance in the Asserted Patents, nor has it posited any technological purpose of such variance. Indeed, it appears that all references to a bevel height being “from” one value to another are references to that parameter falling within a range of values.

For example, the patents provide:

Referring back to FIG. 4, the bevel 38 has a height 100, h_1 , may be greater than 0.25 mm in at least one embodiment. In another embodiment, the height 100, h_1 , of bevel 38 may range from 0.25 mm to 1.1 mm. In another embodiment, the height 100, h_1 , of the bevel 38 may range from 0.28 mm to 1 mm. In at least another embodiment, the ***height 100, h_1 , of the bevel 38 may range from 0.30 mm to 0.75 mm.***

’360 Patent col.6 ll.32–38 (emphasis added). This disclosure of a bevel height in the range of 0.30 mm to 0.75 mm naturally aligns with the “is from 0.30 to 0.75 mm” claim language. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (“The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.”) (quoting *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). That the patentee chose two different phrases (“is from” and “ranges from”) to express similar concepts does not overcome the natural alignment of “is from” with the description of a height falling within a range of values. *See Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004) (“[I]t is not unknown for different

words to be used to express similar concepts"); *Innova/Pure Water, Inc. v. Safari Water Filtration Sys.*, 381 F.3d 1111, 1120 (Fed. Cir. 2004) ("[W]e must conclude that this is simply a case where the patentee used different words to express similar concepts").

Accordingly, the Court construes "is from," with the relevant surrounding claim language for contextual clarity, as follows:

- "height of the bevel is from 0.30 to 0.75 mm" means "height of the bevel is no less than 0.30 mm and no greater than 0.75 mm";
- "height between the peripheral edge and the vertex that is greater than the channel depth and is from 0.30 to 0.75 mm" means "height between the peripheral edge and the vertex that is greater than the channel depth and is no less than 0.30 mm and no greater than 0.75 mm."

V. CONCLUSION

The Court adopts the constructions set forth above, as summarized in the following table. The parties are **ORDERED** that they may not refer, directly or indirectly, to each other's claim-construction positions in the presence of the jury. Likewise, the parties are **ORDERED** to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim-construction proceedings is limited to informing the jury of the definitions adopted by the Court.

Term	Construction
"the vertex of the bevel being in contact with the receiving channel bottom and having an interference fit with the receiving channel bottom"	"the contact of the bevel's vertex with the bottom of the receiving channel where the height of the bevel is greater than the depth of the receiving channel and where the lens as a whole is larger than the frame's area in which to receive the lens"

Term	Construction
“the vertex of the bevel being in contact with the receiving channel bottom, having an interference fit with the receiving channel bottom”	“the contact of the bevel’s vertex with the bottom of the receiving channel where the height of the bevel is greater than the depth of the receiving channel and where the lens as a whole is larger than the frame’s area in which to receive the lens”
the vertex contacting and forming an interference fit with a bottom of the receiving channel	“the contact of the bevel’s vertex with the bottom of the receiving channel where the height of the bevel is greater than the depth of the receiving channel and where the lens as a whole is larger than the frame’s area in which to receive the lens”
“in compression”	“compacted”
“defined by”	“bounded at least in part by”
“height of the bevel is from 0.30 to 0.75 mm”	“height of the bevel is no less than 0.30 mm and no greater than 0.75 mm”
“height between the peripheral edge and the vertex that is greater than the channel depth and is from 0.30 to 0.75 mm”	“height between the peripheral edge and the vertex that is greater than the channel depth and is no less than 0.30 mm and no greater than 0.75 mm”

So ORDERED and SIGNED this 18th day of May, 2018.


 RODNEY GILSTRAP
 UNITED STATES DISTRICT JUDGE